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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/645,125

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Daniel C. Birkestrand

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IBM CORPORATION, INTELLECTUAL PROPERTY LAW  
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EXAMINER

ZHE, MENG YAO

ART UNIT

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2195

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/645,125	<b>Applicant(s)</b> BIRKESTRAND ET AL.	
	<b>Examiner</b> MENG YAO ZHE	<b>Art Unit</b> 2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-13 and 30-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-13 and 30-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/9/2008</u> .  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. Claims 1-2, 4-13, 30-38 are presented for examination.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 4-6, 8, 9, 30, 32, 36, 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dynamic Virtual Clusters in a Grid Site Manager, Sara E. Sprenkle et al., Pub date, June 22-24, 2003 (hereafter Spenkle) in view of Camble et al., Pub No. 2003/0135580 (hereafter Camble) further in view of Virtualizing I/O Devices on VMware Workstation's Hosted Virtual Machine Monitor, published as part of the Proceedings of the 2001 USENIX Annual Technical Conference (hereafter VMware).
4. Camble and Sprenkle were cited in the previous office action.
5. As per claims 1, 30, 36, 38, Sprenkle teaches a method for expanding resources available to a first logical partition on a system associated with a client, the method comprising:

associating one or more partition resources of the first logical partition with a grid, wherein the grid comprises grid resources that are available for use by a plurality of logical partitions associated with the grid (Section 1 Introduction, 1<sup>st</sup> Para, 4<sup>th</sup> Para; Section 2 Overview: 1<sup>st</sup> Para, 4<sup>th</sup> Para beginning with "these functions are...", 5<sup>th</sup> Para: each virtual cluster corresponds to a partition and each virtual cluster can donate and share a set amount of resources to the grid);

providing grid resources from the grid to the first logical partition based upon usage of the partition resources of the first logical partition (Section 1 Introduction, 1<sup>st</sup> Para; Section 2 Overview, 5<sup>th</sup> Para: it is inherent that the grid resources are for sharing between virtual clusters, it is what grid resources are.);

Sprenkle does not specifically teach providing on-demand resources to the first logical partition based upon the usage of the partition resources of the first logical partition and a usage of the grid resources, wherein the on-demand resources are available to the system, and access to the on demand resources is controlled by a manufacturer of the system.

However, Camble teaches providing on-demand resources to logical partitions based upon the usage of the partition resources, wherein the on-demand resources are available to the system, and access to the on demand resources is controlled by a manufacturer of the system (Para 26) for the purpose of purchasing additional resources.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention to modify the teachings of Sprenkle with providing on-demand

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resources to logical partitions based upon the usage of the partition resources, wherein the on-demand resources are available to the system, and access to the on-demand resources is controlled by a manufacturer of the system, as taught by Camble, because it allows for the purchase of additional resources.

Sprenkel in view of Camble does not specifically teach where all of the logical partitions are on a single computer.

However, VMware teaches a plurality of logical partition on a single system where each partition is connected to the network to provide services as a single individual virtual computer for the purpose of virtualization (Fig 3 and section 2.2).

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention to combine the teachings of Sprenkle in view of Camble with the specifics of where all of the logical partitions are on a single computer, as taught by VMware, because it allows for virtualization.

6. As per claim 2, Camble teaches comprising metering a usage of the on-demand resources by the client to determine a cost to assess the client (Para 26). Sprenkle teaches using grid resources among logical partitions (Section 2 Overview, Para 4, Para 5).

7. As per claims 4, Sprenkle teaches wherein associating the one or more partition resources of the first logical partition comprises enabling allocation from the grid

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resources to the logical partition (Section 1 Introduction, Para 1; Section 2 Overview, Para 5).

8. As per claim 5, Sprenkle teaches wherein associating the one or more partition resources of the first logical partition comprises registering with the grid at least a portion of partition resources associated with the first logical partition, to allow the portion to be allocated to the plurality of logical partitions associated with the grid (Section 2 Overview, Para 4, 5).

9. As per claim 6, Sprenkle teaches wherein providing grid resources comprises: determining an unallocated portion of grid resources and allocating the unallocated portion of the grid resources to the first logical partition (Section 2 Overview, Para 4, 5: the resources may be shared, donated, and leased to and from each virtual cluster).

10. As per claims 8, 32, Camble teaches wherein providing on-demand resources comprises: determining that use of partition resources of the first partition has at least reached a partition utilization threshold; determining that sufficient resources are unavailable from the grid resources; and allocating an unallocated portion of the on-demand resources to the logical partition (Para 26: the amount of resources allowed by the license key corresponds to the threshold, which if it is exceeded, the on-demand resources are allocated to the logical partition).

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11. As per claims 9, Camble teaches wherein providing on-demand resources further comprises: determining that usage of the grid resources has at least reached a grid utilization threshold; requesting an enablement code to enable the on-demand resources; and allocating an unallocated portion of the on-demand resources to the logical partition (Para 26).

12. Claims 7, 10, 11-13, 31, 33-35, 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dynamic Virtual Clusters in a Grid Site Manager, Sara E. Sprenkle et al., Pub date, June 22-24, 2003 (hereafter Spenkle) in view of Camble et al., Pub No. 2003/0135580 (hereafter Camble) further in view of Virtualizing I/O Devices on VMware Workstation's Hosted Virtual Machine Monitor, published as part of the Proceedings of the 2001 USENIX Annual Technical Conference (hereafter VMware) further in view of Lumelsky et al., Patent No. 6,460,082 (hereafter Lumelsky).

13. Lumelsky was cited in the previous office action.

14. As per claims 7, 10, 31, Camble teaches a method for expanding resources available to logical partitions on a system associated with a client, the method comprising:

allocating on-demand resources to the first logical partition after the first logical partition reaches a utilization threshold for the previously allocated resources, wherein the on-demand resources are available to the system, and access to the on demand resources is controlled by a manufacturer of the system (Para 26: the amount of

resources allowed by the license key corresponds to the threshold, which if it is exceeded, the on-demand resources are allocated to the logical partition);

billing the client for usage of the on-demand resources (Para 26).

Camble does not teach registering resources with a grid as grid resources, wherein the grid resources are available for use by a plurality of logical partitions and allocating grid resources to a first logical partition after utilization of partition resources of the first logical partition reaches a first utilization thresholds.

Spenkle teaches registering resources with a grid as grid resources, wherein the grid resources are available for use by a plurality of logical partitions for the purpose of sharing resources across virtual clusters (Section 1 Introduction, 1<sup>st</sup> Para, 4<sup>th</sup> Para; Section 2 Overview: 1<sup>st</sup> Para, 4<sup>th</sup> Para beginning with "these functions are...", 5<sup>th</sup> Para: each virtual cluster corresponds to a partition and each virtual cluster can donate and share a set amount of resources to the grid).

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention to modify the teachings of Camble with a grid as grid resources, wherein the grid resources are available for use by a plurality of logical partitions, as taught by Spenkle, because it allows sharing resources across virtual clusters.

Spenkle does not specifically teach a first utilization threshold where allocating grid resources to a first logical partition after utilization of partition resources of the first logical partition reaches a first utilization thresholds.

However, Lumelsky teaches allocating grid resources to the logical partition after



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utilization of partition resources by the logical partition reaches a first utilization threshold (Column 12, lines 38-45; Column 14, lines 35-43, 58-67) for the purpose of establish an overflow pool incase more resources are needed to provide run-time resource compensation.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention to combine the teachings of Camble in view of Spenkle with allocating grid resources to the logical partition after utilization of partition resources by the logical partition reaches a first utilization threshold, as taught by Lumelsky, because it allows the establishment of an overflow pool incase more resources are needed to provide run-time resource compensation.

15. As per claim 11, Camble in view of Spenkle further in view of Lumelsky does not teaches billing the client for usage of the grid resources to offset a cost associated with enabling the on-demand resources. However, since Camble teaches billing for on-demand resources, it would have been obvious for one having ordinary skill in the art at the time of the applicant's invention to bill the client for any type of resources, including grid resources.

16. As per claim 12, Camble teaches the method of claim 10, wherein billing the client for usage of the on-demand resources comprises billing the client for the on-demand resources allocated to the first logical partition based upon actual usage of the on-demand resources (Column 26).

17. As per claim 13, Lumelsky teaches the method of claim 10, wherein billing the client for usage of the resources comprises billing the client for the resources allocated to the first logical partition based upon a quantity of the resources allocated and the amount of time for which the quantity of the on-demand resources are allocated. (*Figure 2, unit 152: it has a cost per minute associated with it.*). Camble teaches on-demand resources may be allocated to the logical partitions (Para 26).

18. As per claim 33, Lumelsky further teaches the threshold comprising an amount of resources used during a predetermined amount of time. (*Column 8, lines 39-60: resource usage is fixed to a number of time intervals allowed for usage.*)

19. As per claims 34, 37, Camble teaches a first fee and a second fee. (*Para 19, lines 11-12; Para 21, lines 1-6*).

20. As per claim 35, Camble in view of Spenkle further in view of Lumelsky does not specifically teach wherein at least one of the first fee and the second fee vary based on a factor chosen from the group consisting of a time of day and a time of year. However, it would have been obvious to one having ordinary skill in the art of computing resource provisioning to vary to the fee according to demands and needs for the purpose of maximizing profits over time.

***Response to Arguments***

21. Applicant's arguments filed on 6/23/2008 regarding to claims 1-2, 4-13, 30-38 have been fully considered, but they are moot in view of the new ground of rejection.

***Conclusion***

22. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MENG YAO ZHE whose telephone number is (571)272-6946. The examiner can normally be reached on Monday Through Friday, 7:30 - 5:00 EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Li B. Zhen/  
Primary Examiner, Art Unit 2194